•DES Calibration

• Progress thus far

DARK ENERGY SURVEY

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Progress

- Before I had a script to calculate the instrumental Calibration
  - instr = mag_aper_8 + 2.5*log10(exptime) – zeropoint

Now I have developed a script that will run the instrumental magnitude, and add in the color terms calibrations.

The script uses Awk, Stilts, and Python commands

Example for the g band:

$$g = g\_instr - a\_g - b\_g*((g-r) - (g-r)0) - k\_g * X$$

a_g is the photometric zeropoint

b_g is the instrumental color term coefficient

k_g is the first order extinction

X is the airmass

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Progress

- Areas of the sky that have been processed with the script thus far:

	RA	DEC
•E1	19.20 -> 23.20	-46.65 -> -42.65
•E2	58.75 -> 62.75	-46.78 -> -42.78
•E3	98.72 -> 102.72	-47.17 -> -43.17
•E4	138.93 -> 142.93	-47.43 -> -43.43
•E5	179.05 -> 182.05	-47.48 -> -43.48
•E6	219.60 -> 223.60	-47.48 -> -43.48
•E8	299.84 -> 303.84	-46.70 -> -42.70
•E9	339.40 -> 343.40	-46.46 -> -42.46
•C26202	51.11 -> 55.12	-29.85 -> -25.80

* E1, E2, E8, E9, C26202 Did not contain any data.
* E3 did not have enough data to create matches.
* E5 and E6 have been calibrated.
* E4 has experienced technical difficulties with the stilts commands.

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Problems and Plans for the future

- For files that are too large the stilts doesn't seem to want to work.
- The E4 file is 2.8gb and stilts commands have been difficult

- For the future:
  - I want to make the entire script in a python script.
    - It is a currently a bash script that calls the awk, python and stilts commands.